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COVID – 19 and informal workers in developing countries: the cases of Nigeria and Ethiopia

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ABSTRACT: Developing countries have some characteristics that can make it difficult to implement policies to contain the spread of the virus: for example, a lack of an extensive social protection system, poor public and private infrastructure, a widely spread informal job market, and a large part of the population with a low education level. The paper aims to analyze how the two countries have tried to counter the spread of COVID-19 in the first stage of the pandemic, between April and May 2020, and whether emergency assistance has been provided to informal workers if needed. The initial hypothesis is that, during the first peak, Ethiopia performs better than Nigeria in combating the spread of the virus using public policies for informal workers. According to the results, coping with the spread of the virus had different outcomes in the two countries in the first wave. On one side, the results indicate that Ethiopia did not need to close the economy completely during the first peak of COVID-19 in the country. This is supported by the fact that, regardless of whether they worked in a formal setting or not, approximately 85% of people were able to work normally during the pandemic.This opening of the economy has led to minor assistance from the state and other institutions compared with Nigeria. On the other side, the results about Nigeria showed that the government closed the economy and limited social relations according to the severity of the pandemic in a given region or city. The most affected workers appear to be informal ones, who, in most cases, continued to work despite restrictions by the government. These workers benefited most from emergency aid from the government and other institutions, but it appears that this aid was not in the amount necessary to encourage them to stay at home and not work. The paper concludes that, according to the results, the initial hypothesis that public policies played a fundamental role in the better performance of Ethiopia compared with Nigeria cannot be confirmed. Moreover, Ethiopia's worse performance in successive periods of the pandemic may be due to several factors affecting the virus-fighting results. This experience can thus provide us with some general conclusions that will help in future health emergencies. The challenge in the developing world will be to improve health delivery systems by recruiting and equipping health professionals to face future pandemics, thus readjusting the health system to meet the demand of the current pandemic's worst periods. On the other side, for these measures to achieve positive results, it will be necessary to implement public policies that provide subsistence conditions for individuals who are below the poverty line, mostly working in the informal sector.

Keywords: COVID-19; informality; Nigeria; Ethiopia

INTRODUCTION

Coronavirus Disease 2019 (COVID-19) was first identified in humans in December 2019 in the city of Wuhan, China and from there, the virus has spread rapidly in several countries worldwide. The initial outbreak gave rise to a global pandemic: the speed and intensity of population contamination by the virus led the World Health Organization (WHO) to classify the illness as a pandemic on 11 March 2020. Since the first cases were registered in Africa, the virus has spread rapidly to all countries; Nigeria and Ethiopia have not been in a different situation. However, it seems that coping with the spread of the virus had different results in the two countries during the first period of the pandemic. Nigeria was one of the first countries in Sub-Saharan Africa to be affected by COVID-19.

The Government tried to respond to the pandemic by implementing strict measures to reduce social interaction between people. However, the public resources to fight the spread of this virus have been reduced since global oil prices dropped dramatically. This was reduced 60% in April 2020 because of the pandemic. The oil sector is fundamental for Nigerian government accounts since most revenues come from exploiting this natural resource. So, the Federal Government has had fewer resources available to concurrently fight the public health emergency of COVID-19 and an economy in crisis (Fafunmi, Adebisi, 2020).

Despite severe financial and human capital constraints, Ethiopia has performed well in combating COVID-19 in the first wave and its results have far been better than anyone expected. From the beginning, Prime Minister Abiy Ahmed's Government focused not on the number of respirators it had, but on the public-health policies taken to reduce the virus's spread. At the same time, the Ethiopian Government also has focused on the economy, preventing job losses and ensuring firms' survival. As a result, the Ethiopian economy was one of Africa's fastest-growing economies during 2004-2018, growing at a 10.5% average annual rate. Moreover, the strategy was not the implementation of a general lockdown like most other governments; instead, Ethiopia introduced other crucial measures in January, well ahead of most developed countries. Additionally, it has supported the production and other economic activities to continue during the first emergency, thus considerably alleviating the negative effects of the pandemic on vulnerable social groups and the informal sector. (Oqubay, 2020). Until mid-July 2020, COVID-19 has generated, in Nigeria and Ethiopia, respectively 37,801 (19.30 per 100,000 inhabitants) and 11,072 (10.13 per 100,000 inhabitants) confirmed cases and several deaths of 805 and 180, respectively (Johns Hopkins University, 2020).

The spread of an infectious disease can be considered biological and social. An infectious disease spreads as a function of its biology, but it is also aided by a host of social interactions, from the face-to-face relations of people to the decisions people make regarding vaccines and hand hygiene. In the case of COVID-19, given the initial lack of a vaccine against the disease and the intensity of the morbidity and mortality rates observed in several countries, the most appropriate strategy to contain the spread of the virus pointed out by the WHO authorities and health experts were social isolation. Several countries have experienced different types of social isolation at the beginning of 2020: from soft social isolation, as happened in Sweden, to a total lockdown, like in Italy and Spain. Developing countries have some characteristics that can make it challenging to implement a lockdown: for example, lack of a large social protection system, poor public and private infrastructure, widely spread informal job market, and a big part of the population with a low education level. This paper will consider lockdown implementation in the significant presence of informality in the economy. Informality is an economic problem that affects developing countries. For example, according to the International Labour Organisation (ILO, 2018), in Nigeria, over 80% of working people were employed in the informal sector, while UNDP (2012) showed that the informal economy accounts for about 50-60 percent of employment in Ethiopia.

The paper aims to analyze how the two countries have tried to counter the spread of COVID-19 in the first period of the pandemic and whether emergency assistance has been provided to informal workers if needed. The initial hypothesis to be tested is that Ethiopia performs better than Nigeria in combating the spread of the virus in the first peak due to public policies developed for informal workers.

LITERATURE REVIEW

Boin (2019) evidenced the role of public institutions during crises. Big crises, like the current pandemic, often can result in crises for democracy. Since protecting its citizens from the consequences of threats should be a central task of the state, governments are expected to be able to fulfill that role. By breaking with this tacit and shared premise, the legitimacy of public institutions and the reputation of political leaders would be undermined. As The Economist (2020) magazine recently highlighted, the State's emergency role as guarantor of the economic system and provider of financial and material aid to immense population contingents has become defensible for most economists - even if the fiscal cost of the measures already announced is at least 50% higher than that of the 2008 crisis. According to ILO (2020a), the sectors most affected by the COVID-19 pandemic will be services, manufacturing, accommodation and food services, property sales, and small commercial companies, which are labor intensive and employ millions of often low-paid, low-skilled workers, most of them informal workers in emerging and developing countries. ILO (2020b), in another study, assuming a situation without any alternative income sources, calculated that lost labor income will have, as a consequence, a rise in relative poverty for informal workers and their families of more than 21 percentage points in upper-middle-income countries, almost 52 points in high-income countries and 56 points in lower- and low-income countries.

In the same publication, ILO explains that, for most women and men in the informal economy, an income is necessary to feed themselves and their families since most of them cannot rely on other income sources or welfare state rights. Therefore, most informal workers in developing countries face the dilemma "To die from hunger or from the virus". Not working and staying home imply losing their jobs and incomes, so most of the time, this is not considered an option for many informal workers. Werneck, & Carvalho (2020) analyze the best form of social isolation in Brazil and other developing countries. An effective "vertical isolation" strategy could be the most efficient also because it reduces the economic and social repercussions associated

with "horizontal isolation"[1]. It happens, however, that the conditions for the execution of an effective "vertical isolation", in the current situation of the epidemic in developing countries are minimal. This is partly due to the high rate of expansion of the infection and the difficulties in monitoring and strict surveillance of cases and contacts since the proportion of asymptomatic patients approaches 80% of those infected.

As regards the models for analyzing infectious epidemics, two studies useful for this study can be cited. Kermack, and McKendrick (1927) created the most used epidemiologic model, the deterministic SIR model. In this model, the equations of the dynamic system, which governs the evolution of the number of susceptible individuals S, infected I and recovered R out of a total population of N inhabitants, are governed by a system of non-linear differential equations, for which there are no exact analytical solutions. Pereira Rocha and de Lima Tomazelli (2020) adapted the SIR model to the social, economic, and demographic characteristics of Brazil and the response of the country to the Covid-19 emergency. The researchers created the SI_3R_2 stochastic model. The letters of the model represent the possible states that individuals of the population can occupy: one state of the susceptible type, three states of the infected type and two states of the recovered type.

THE MODEL

The basis of most current theoretical models in epidemiology is the SIR, in which individuals can move from one status to another: susceptible S, infected I, and recovered R (Pereira Rocha, de Lima Tomazelli, 2020). The disease process that fits the SIR framework has a flow of individuals from the susceptible group to the infected group and finally to the recovered or removed group.

Susceptible → Infected → Recovered

An individual potentially moves from the susceptible to the infected group when it comes in contact with an infected person (Kermack, McKendrick, 1927). Inspired by the original SIR model and the work of Pereira Rocha, de Lima Tomazelli (2020), this paper proposes the stochastic model $S_2I_3R_2$. The letters in the model represent the possible states that individuals in the population may occupy, with two states of the susceptible type, three of the infected type, and two of the removed kind. At any given moment, each individual in the population can occupy a single state: S_W susceptible and working, S_{NW} susceptible and not working, Q infected in quarantine, I asymptomatic infected circulating, H infected and hospitalized, R recovered from the disease and D death.
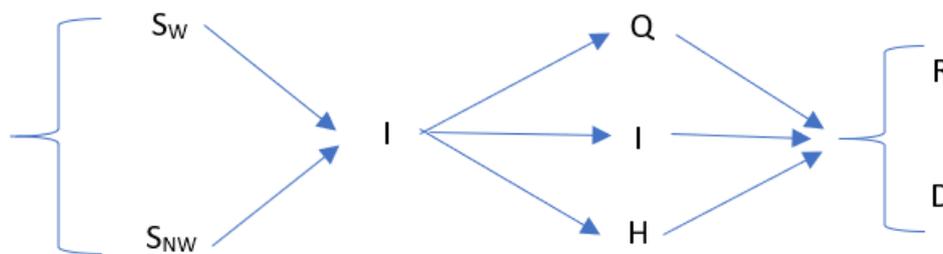
The model considers two types of workers: those working in the formal market and those working in the informal market; however it focuses the analysis on informal workers. In a situation like the pandemic, the fundamental difference between the two types of workers is that informal workers need to work to receive an income (and sometimes to survive) even though they can be infected, while formal workers receive their salary even if they don't work, or they have the possibility of home working, or welfare state rights protect them. In addition, each type of worker has a specific utility function according to to be working (U_W) or not (U_{NW}) in the **susceptible status.**

The equations defining the utility of informal workers are the following:

$U_W = (1-\pi)w - \pi h$ (1)

$U_{NW} = (1-\pi)h - w + B$ (2)

where

w = salary

B = emergency assistance from the Government or other institutions

$h = h_C + \alpha h_L$ = health expenses due to pandemic (h_C = constant value, h_L = value of person's life)

π = probability of being infected

α = probability of dying

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[1] In the vertical distancing policy, only older people and risk groups are distanced, whereas in the horizontal distancing policy all society adhere to social distancing.

Equation 1 shows the utility of informal workers (U_W) whether they are working during the pandemic. In this case, utility is positively affected by salary, which is weighted by the probability of not being infected, and negatively by health expenses, which are weighted by the probability of being infected. Equation 2 shows the utility of informal workers (U_{NW}) whether they are not working during the pandemic. In this case, health expenses are considered positive since the worker staying at home can avoid these expenses, while the salary is a negative element because, in the case of informality, working is essential to receive compensation. B represents emergency assistance to supplement workers' income from the Government or other institutions. Since informal workers also need to work during the pandemic, emergency assistance (B) is necessary to incentivize these workers to stay at home and not work. The minimum value that each informal worker needs to receive to stay at home is determined in equation 3:

$$(1 - \pi)h - w + B \geq (1 - \pi)w - \pi h \quad \rightarrow \quad B \geq (2 - \pi)w - h \qquad (3)$$

Passing to the **infected status**, three situations can be evidenced: infected worker with symptoms but not seriously ill, who is forced by the health authorities to stay at home (Q); infected worker without symptoms (I); infected worker seriously ill, who is hospitalized (H).
According to each situation, the utilities of informal workers are:

$$U_Q = B - w - h \qquad\qquad\qquad (4)$$
$$U_{IW} = (1-\pi)w - \pi h \text{ (working)} \qquad\qquad (5)$$
$$U_{INW} = (1-\pi)h - w + B \text{ (not working)} \qquad (6)$$
$$U_H = B - w - h \qquad\qquad\qquad (7)$$

Equation 4 shows the utility of quarantined informal workers who receive emergency assistance but are losing their salaries and have health expenses due to the pandemic. Equations 5 and 6 show the utility of asymptomatic infected, who continue to behave as before. Thus, emergency assistance is the variable that determines whether an informal worker stays at home or continues to work, according to equation 3. Equation 7 shows the utility of hospitalized workers, which is affected positively by emergency assistance and negatively by the loss of salary and health expenses due to the pandemic. Finally, the **recovery status** has two situations: recovered and dead workers. The utilities in the recovery status are:

$$U_R = B + w \qquad\qquad\qquad (8)$$
$$U_D = 0 \qquad\qquad\qquad\qquad (9)$$

In the case of a recovered situation, the worker's utility is positively affected by emergency assistance, which is supplied to informal workers independently to their health situation, and by salary, considering a case where recovered workers can work without limitations (with the assumption that recovered individuals get immunity to the virus).

MATERIALS AND METHOD

The data utilized in this paper are from the Nigeria COVID-19 National Longitudinal Phone Survey and Ethiopia COVID-19 High-Frequency Phone Survey of Households 2020 (Round 1). The National Bureau of Statistics jointly implemented Nigeria COVID-19 National Longitudinal Phone Survey (COVID-19 NLPS) with World Bank. The nationally representative sample consists of 1,950 households. COVID-19 NLPS households were drawn from the sample of households interviewed in 2018/2019 for Wave 4 of the General Household Survey—Panel (GHS-Panel). COVID-19 NLPS survey was conducted between 20 April and 11 May 2020 and coincided with a lockdown initiated on 30 March 2020 in Nigeria (Fafunmi, Adebisi, 2020).

Ethiopia built the High-Frequency Phone Survey of Households (HFPS-HH), in collaboration with the World Bank, on the national longitudinal Ethiopia Socioeconomic Survey (ESS) that the Central Statistical Agency (CSA) carried out in 2019. The HFPS-HH was built as a subsample of the ESS sample representative of households with access to a working phone. The HFPS-HH was implemented between 22 April and 13 May 2020 and is based on a sample of 3,249 households in urban and rural areas in all regions of Ethiopia. The questionnaire lasted 15 minutes, covering topics such as awareness of COVID and mitigation actions, access to schools during the pandemic, employment changes, household income and livelihood, income loss, and assistance received (Wieser et al., 2020).

The methodology used in this paper is descriptive statistics[2]. Descriptive statistics are used to summarize data systematically by explaining the relationship between variables in a sample or population. Analyzing descriptive statistics represents a fundamental first step when conducting research and should always occur before conducting inferential statistical studies. Furthermore, as descriptive statistics summarize data into a simpler summary, they allow healthcare and public policy decision-makers to focus on specific populations more effectively (Kaur et al., 2018).

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[2] To obtain these statistics, Stata 16 software was employed.

RESULTS AND DISCUSSIONS

Before analyzing the economic conditions of informal workers, it is interesting to verify whether Nigerians and Ethiopians have changed their behaviors and taken social distancing measures. So, the first analysis concerns behaviors in response to COVID-19 (Table 1). Almost all interviewed individuals in the two countries indicated they had changed their behavior to reduce the risk of contracting COVID-19. There are no big differences between the percentages in the two countries: the populations of the two countries behave correctly in the fight against COVID-19. However, these results can be biased, because there seems to be a tendency to overreport positive behavior changes, as Wieser et al. (2020) reported. According to Table 1, in Ethiopia, the behaviors "Washing hands more often" and "Avoiding handshakes/ physical greetings" are practiced by a slightly larger portion of the population than in Nigeria. On the contrary, Nigeria shows a better percentage in the behavior "Avoiding groups of more than 10 people": the difference between the two countries is 10 percentage points.

Table 1. People's behaviors since mid-March 2020.

Behavior	Nigeria		Ethiopia	
	Yes	No	Yes	No
Washing hands more often	96.49	3.51	98.40	1.60
Avoiding handshakes/ physical greetings	94.12	5.88	96.10	3.90
Avoiding groups of more than 10 people *	93.92	5.98	83.18	13.22

Source: Own elaboration using Nigerian and Ethiopian COVID-19 Phone Survey of Households
*In this case, the sum of positive and negative responses is not 100% because, in the questionnaire, the option "Not Applicable" was also available.

Moving the analysis to informal workers, the first step is defining informality according to the utilized surveys. Since, in the surveys, a question about informality does not exist (formal or informal worker), this paper considers informal workers as individuals answering that are working in their own business or in a business operated by a household or family member or in a family farm, raising family livestock, or fishing. Using the same question, formal workers are defined as individuals working as an employee for a private company or as an employee for the Government. Considering this definition of formality, the next table (Table 2) evidences the percentages of formal and informal workers considering all individuals that, in the week before the interview, worked for pay, did any business, farming, or other activity to generate income, even if only for one hour.

Table 2. Percentage of individuals working in the last week

	Nigeria (%)	Ethiopia (%)
Formal workers	20.52	42.03
Informal workers	79.48	57.97

Source: Own elaboration using Nigerian and Ethiopian COVID-19 Phone Survey of Households

In Nigeria, 79,48% of individuals that worked in the week before the interview are informal workers, while this percentage is 57,97% in Ethiopia, that is; according to these surveys, among employed people, informal workers are a large majority in Nigeria, while are a small majority in Ethiopia. Thus, the two countries have faced the pandemic starting from different situations regarding the labor market and social division. These figures agree with literature about the informal economy: for example, Fapohunda (2013) points out that, in Nigeria, this sub-sector accounts for about 70,00% of the total industrial employment, while Rossetti (2015) evinces that, in Ethiopia, 50,60% of urban employed are in the informal sector. Table 3 shows the percentage of individuals able to work as normal during the pandemic according to employment in the formal or informal sector. Comparing the situation in the two countries, it is evident that there is no difference in the percentage of individuals able to work as normal according to formal/informal classification. However, it exists a difference when all workers are considered in both countries and the percentages are compared between countries: in Ethiopia, approximately 85% are working as normal, while in Nigeria this percentage is 29,30% and 19,73%. This large number of individuals working as normal in Ethiopia can be a consequence of the Government's strategy of introducing crucial measures in January, as evidenced in the introduction.

Table 3. Percentage of individuals able to work as normal during pandemic

	Nigeria (%)		Ethiopia (%)	
	Working as normal	Not Working as normal	Working as normal	Not working as normal
Formal workers	29.30	70.70	84.54	15.46
Informal workers	19.73	80.27	85.25	14.75

Source: Own elaboration using Nigerian and Ethiopian COVID-19 Phone Survey of Households

Tables 4 and 5 show how household income changed in Nigeria and Ethiopia based on how people made a living. In Nigeria, most livelihood sources were reduced during the period starting from the beginning of the pandemic until the day of the survey, regardless of the condition of formality or informality. As it could be imaged, the exception is "Pension", which, in both cases, remains the same in approximately 80% of households. It can be evidenced that the assistance from the Government increased with a higher percentage in the case of informal workers.

Table 4. Income changes from different sources of livelihood (%) – Nigeria

Sources of livelihood	Formal			Informal		
	Increased	Stayed the same	Reduced	Increased	Stayed the same	Reduced
Household farming, livestock or fishing	7.49	16.87	75.64	10.08	22.64	67.27
Non-farm family business	5.42	9.38	85.20	7.23	12.19	80.58
Wage employment	2.91	46.12	50.97	7.04	30.28	62.68
Remittances from abroad	4.55	40.91	54.55	7.50	22.50	70.00
Remittances from the family within the country	3.09	24.40	72.51	5.30	21.85	72.85
Assistance from other non-family individuals	8.22	13.82	77.96	2.82	20.42	76.76
Income from properties, investments or savings	10.65	28.99	60.36	9.89	27.47	62.64
Pension	2.41	84.34	13.25	0.00	81.48	18.52
Assistance from the Government	13.16	26.32	60.53	21.74	43.48	34.78
Assistance from NGOs / charitable organization	13.95	4.65	81.40	12.50	25.00	62.50
Other	0.00	25.00	75.00	33.33	0.00	66.67

Source: Own elaboration using Nigerian COVID-19 Phone Survey of Households

In Ethiopia, according to Table 5, the situation is not much different; compared to Nigeria, the condition "stayed the same" is prevalent and when an increase occurred is less pronounced than in Nigeria. However, a serious situation to be evidenced is "Assistance from NGOs / charitable organization", which did not increase in all households.

Table 5. Income changes from different sources of livelihood (%) – Ethiopia

Sources of livelihood	Formal			Informal		
	Increased	Stayed the same	Reduced	Increased	Stayed the same	Reduced
Household farming, livestock or fishing	0.96	56.73	38.46	1.65	50.74	45.04
Non-farm family business	1.19	19.05	60.71	1.39	9.14	74.52
Wage employment	0.69	84.44	14.31	1.04	44.27	44.27
Remittances from abroad	7.32	51.22	14.63	3.70	40.74	20.37
Remittances from the family within the country	2.63	63.16	15.79	8.33	46.67	25.00
Assistance from other non-family individuals	-	-	-	-	-	-
Income from properties, investments or savings	2.38	55.95	28.57	2.27	43.18	47.73
Pension	0.00	98.08	1.92	0.00	100.00	0.00
Assistance from the Government	16.00	64.00	8.00	6.41	62.82	14.10
Assistance from NGOs / charitable organizations	0.00	77.78	22.22	0.00	52.94	29.41
Other	-	-	-	-	-	-

Source: Own elaboration using Ethiopian COVID-19 Phone Survey of Households
Note: The source "Assistance from other non-family individuals" was unavailable for respondents in Ethiopian Survey. The source "Other" has no respondents in the survey.

Finally, the last analysis is about the value received by the household as assistance from different institutions and programs.

Table 6. Average assistance from different institutions and programs

	Average assistance	
	Nigeria (Naira)	**Ethiopia (Birr)**
Formal workers	13768.19 (35.50 US$)	583.33 (16.90 US$)
Informal workers	8993.18 (23.20 US$)	886.94 (25.70 US$)

Source: Own elaboration using Nigerian and Ethiopian COVID-19 Phone Survey of Households

Table 6 shows the average value received by households in Nigeria and Ethiopia according to the labor situation. The value is calculated considering the period from mid-March to the interview date. In Nigeria, the values are higher than in Ethiopia, but the help has come more vigorously for formal workers. The situation is the opposite in Ethiopia: the largest value was received by informal workers. However, the assistance appears insufficient to encourage informal workers to stay home.

The results indicate that neither country stands out when policies to combat COVID-19 are analyzed: Nigeria performs better by increasing the assistance from the Government, especially for informal workers; Ethiopia behaves better in the value of the assistance from different institutions and programs. It appears that Ethiopia interfered less in society through policies than in Nigeria and, as they were less affected by COVID-19 in the first wave, showed a larger percentage of people able to work as normal.

This paper considered two African countries that implemented different types of policies to fight COVID–19 spread at the beginning of the emergency. On one side, Ethiopia did not need to close the economy completely during the first peak of COVID-19 in the country. This fact is confirmed by the percentage of approximately 85% of individuals able to work as normal during the pandemic, regardless of the condition of being formal or not. This opening of the economy has led to minor assistance from the state and other institutions compared with Nigeria. Unfortunately, Ethiopia did not keep these positive results in the successive periods of the pandemic. In August 2022, Ethiopia totalized 493,316 (428.97 per 100,000 inhabitants) confirmed cases and a number of deaths 7,572 (Johns Hopkins University, 2022). The worsening of the pandemic in Ethiopia in successive waves is confirmed by Amhare et al. (2022), who affirmed that the second wave of COVID-19 in Ethiopia was far greater, and its duration was longer than the first. We can suppose that Ethiopia's worse performance in the successive periods of the pandemic may be due to several factors (discontinuity of public policies, availability and use of face masks and hand sanitizer, vaccines, health infrastructure, and health personnel) affecting the virus-fighting results.

On the other side, Nigeria showed a classic first response to the COVID-19 pandemic, with closings in the economy and limitations to social relations according to the severity of the pandemic in each region or city. The workers most affected by this situation appear to be informal workers, who, in most cases, continued to work despite restrictions by the Government. These workers benefited most from emergency aid from the Government and other institutions, but it appears that this aid was not in the amount necessary to encourage them to stay at home and not work. In August 2022, Nigeria totalized 264,299 (128.23 per 100,000 inhabitants) confirmed cases and a number of deaths of 3,154 (Johns Hopkins University, 2022).

Thus, according to the results, the initial hypothesis that public policies had a fundamental role in the better performance of Ethiopia compared with Nigeria cannot be confirmed. This paper's results make us wonder if the next pandemic will be addressed correctly and if the COVID-19 experience will help in future health emergencies. The challenge in the developing world is to improve health delivery systems, enlisting health professionals and equipping them to face future pandemics, so readjusting the health system according to the demand of the worse periods in the present pandemic. On the other side, for these measures to achieve positive results, it is necessary to implement public policies, providing subsistence conditions for individuals who are below the poverty line, mostly working in the informal sector. Without public policies to supplement their income, it will be impossible to keep these people with this profile in isolation. The simple vertical isolation of risk groups, such as the elderly, does not inhibit the circulation of the virus among other individuals in the population, where the main vectors of disease transmission are found; in practice, control mechanisms without transferring resources to the low-income population correspond to vertical isolation, predetermined by social stratification.

CONCLUSION

The purpose of this paper is to search at how Nigeria and Ethiopia attempted to prevent the spread of COVID-19 during the first stage of the pandemic, from April to May 2020, and how informal workers were given emergency assistance. The first idea is that Ethiopia does a better job than Nigeria during the first peak of the spread of the virus by using public policies for informal workers. But based on the results, the original hypothesis can't be proven.

Software
Software: STATA 16.

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